An important problem in image analysis is the separation of large scales (cartoon features) from smaller periodic scales (texture) in images. Y. Meyer suggested that models such as Mumford-Shah, Rudin-Osher-Fatemi can be viewed as decomposition models into cartoon and texture, not only as image segmentation, restoration models. In such models, the texture component is modeled by a square-integrable function. Following Y. Meyer, we propose and analyze a model where the textured component is better represented by a generalized function belonging to $\text{div}(BMO)$, while the cartoon component is a function of bounded variation. Theoretical, approximations and numerical results of image decomposition will be presented. (Received October 05, 2004)